

WHAT IS CLAIMED IS:

1. A coin drop mechanism for activating a vending machine which does not require the user to turn a knob or rotate a lever to activate the vending machine, said coin drop mechanism comprising,

a coin receiving channel member configured to receive two or more coins, said channel configured to temporarily retain said coins, said channel member having an actuator opening, said opening being blocked by the final coin required to be inserted to complete the purchase;

an actuator depressed by the user after insertion of the required number of coins, said depressed actuator engaging the coin blocking said actuator opening and causing said channel member to pivotally displace about an axis, said pivotable movement occurring only when said coin blocks said opening, said actuator otherwise passing through said opening in said channel member without pivotably displacing the channel member; and

a product support member supporting a plurality of the product offered for sale, said product support member actuated by the pivotable displacement of said channel member to dispense the purchased product.

2. A coin drop mechanism for activating a vending machine to dispense a product offered for sale comprising:

a channel member configured to receive at least one coin and direct said coin to a dispense enabling location in the channel having an actuator opening, said opening being blocked when said coin resides in said location;

said channel member having a contoured non-linear passageway for inhibiting theft of said product offered for sale by preventing use of a foreign object to cover said actuator opening;

an actuator configured to engage a coin located at said dispense enabling location and hold said coin against said channel member to pivotally displace the channel member about an axis, said pivotal movement occurring only when a coin resides at said dispense enabling location, said actuator otherwise passing through

said actuator opening in said channel member without pivotally displacing the channel member; and

a product support member supporting a plurality of the product offered for sale, the support member configured to be displaced by the pivotal displacement of the channel member to dispense the product offered for sale.

3. A coin mechanism for a vending machine requiring at least one coin before a selected product will be dispensed, comprising:

a support member;

a channel member movably connected to the support member;

a contoured channel formed on at least one of the support and channel members and configured to receive and guide the at least one coin to a desired location; and

an actuator opening formed on the support and channel members aligned with the at least one coin disposed in the desired location, the actuator opening configured to receive an actuation member therethrough onto the at least one coin, the actuation member configured to transmit an actuation force onto the at least one coin to displace the channel member relative to the support member to dispense the selected product.

4. A coin mechanism for a vending machine requiring at least one coin before a selected product will be dispensed, comprising:

a support member;

a channel member movably connected to the support member;

a contoured channel formed on at least one of the support and channel members and configured to receive and guide the at least one coin to a desired location;

an actuator opening formed on the support and channel members aligned with the at least one coin disposed in the desired location; and

an actuator configured to transmit a force through the actuator opening onto the at least one coin disposed in the desired location to displace the channel member relative to the support member to dispense the selected product.

5. The coin mechanism of Claim 4 further comprising:

a flag member removably connected to the support member, wherein the flag member is configured to be pivotably displaced into a locked position blocking at least a portion of a coin slot defined between the support member and the channel member when there is no product disposed above the selected product.

6. A coin mechanism for a vending machine requiring at least one coin before a selected product will be dispensed, comprising:

a support member having an inner surface and an outer surface;

a channel member movably connected to the support member, the channel member having a contoured channel formed thereon, the channel configured to define a coin slot when the channel member is in contact with the support member, the channel configured to receive and guide the at least one coin to a desired location, an actuator opening formed on the support and channel members at a location corresponding to the location of the at least one coin in the desired location, the channel member configured to normally be in contact with the support member and to displace relative to the support member when the coin mechanism is actuated;

a coin return actuator connected to the support member, the return actuator comprising at least one protrusion protruding through the support member, the member configured to hold the at least one coin at least in part against a wall of the contoured channel when the channel member is in contact with the support member, the at least one member further configured to travel in a second actuator opening formed on the support member to release the at least one coin into a coin return receptacle upon actuation of the coin return actuator;

an actuator comprising

a contact portion disposed frontward of the support member,

at least one support element movably disposed through the support and channel members, the at least one support element having a front portion disposed between the contact portion and the support member, and

an actuation member configured to protrude through the actuator opening in the support member and engage the at least one coin disposed in

the desired location against the channel member upon actuation of the coin mechanism; and

a product support member connected to the channel member, the product support member comprising an edge configured to releasably support the selected product disposed in a product receptacle, the edge configured to not support the selected product upon actuation of the coin mechanism, causing the selected product to be dispensed, the product support member further configured to releasably engage at least one product in the product receptacle disposed above the selected product following the dispensation of the selected product.

7. The coin mechanism of Claim 6, wherein the channel member is hinged to the support member.

8. The coin mechanism of Claim 6, wherein the channel member is rotatably connected to the support member.

9. The coin mechanism of Claim 6 further comprising at least one coin guide attached to the channel member and protruding over the contoured channel, wherein the at least one coin guide is configured to prevent the at least one coin disposed in the contoured channel from being released to the coin return receptacle when the channel member is displaced relative to the support member during actuation of the coin mechanism.

10. The coin mechanism of Claim 6, wherein the channel member is configured to release at least one coin into a coin bank when the channel member is displaced relative to the support member during actuation of the coin mechanism.

11. The coin mechanism of Claim 6, wherein the actuation member is configured to protrude through the actuator opening formed on the channel member when the actuator is actuated by a user without the at least one coin disposed in the desired location, preventing the selected product from being dispensed.

12. The coin mechanism of Claim 6, wherein a spring is disposed between the channel member and the product receptacle, the spring configured to displace a flag member to engage at least one product disposed above the selected product through an opening in the product receptacle during actuation of the coin mechanism.

13. The coin mechanism of Claim 12, wherein a second spring is disposed at the front portion of the at least one support element, the second spring configured to generate a return force on the contact portion when the actuator is actuated by a user.

14. The coin mechanism of Claim 6, wherein the product support member is removably attached to the channel member.

15. The coin mechanism of Claim 6, wherein the product support member defines an opening, the support member displaced upon actuation of the coin mechanism so that the edge removes support from the selected product, causing the selected product to be dispensed through the opening.

16. The coin mechanism of Claim 6, wherein the product support member has a concave surface, the support member pivotally connected to the product receptacle and the channel member, and configured to rotate in a direction away from the support member upon actuation of the coin mechanism.

17. The coin mechanism of Claim 16, wherein an upper edge of the product support member rotates beneath at least one product disposed above the selected product upon actuation of the coin mechanism, the upper edge providing support to the at least one product.

18. The coin mechanism of Claim 17, wherein a lower edge of the product support member rotates away from the selected product during actuation of the coin mechanism, causing the selected product to be dispensed.

19. A coin mechanism for a vending machine requiring at least one coin before a selected product will be dispensed, comprising:

a support member having an inner surface and an outer surface;

a channel member rotatably connected to the support member, the channel member having a contoured channel formed thereon, the channel configured to define a coin slot when the channel member is in contact with the support member, the coin slot configured to receive and guide the at least one coin to a desired location, an actuator opening formed on the support and channel members at a location corresponding to the location of the at least one coin in the desired location, the channel member configured to normally be in contact with the support member and to

displace relative to the support member when the coin mechanism is actuated, releasing at least one coin disposed in the contoured channel into a coin bank;

a coin guide attached to the channel member and protruding over the contoured channel, wherein the coin guide is configured to prevent the at least one coin disposed in the contoured channel from being released to a coin return receptacle when the channel member is displaced relative to the support member during actuation of the coin mechanism;

a coin return actuator connected to the support member, the return actuator comprising at least one protrusion protruding through the support member, the protrusion configured to hold the at least one coin at least in part against a wall of the contoured channel of the channel member when the channel member is in contact with the support member, the at least one protrusion further configured to travel in a second actuator opening formed on the support member to release the at least one coin into the coin return receptacle upon actuation of the coin return actuator;

an actuator comprising

a contact portion disposed frontward of the support member,

at least one support element movably disposed through the support and channel members, the at least one support element having a front portion disposed between the contact portion and the support member,

an actuation member configured to protrude through the actuator opening in the support member and engage the at least one coin disposed in the desired location against the channel member upon actuation of the coin mechanism, the actuation member further configured to protrude through the actuator opening formed on the channel member when the actuator is depressed by the user without the at least one coin disposed in the desired location, preventing the selected product from being dispensed,

a spring disposed between the channel member and a product receptacle, the spring configured to displace a flag member to engage at least one product disposed above the selected product through an opening in the product receptacle during actuation of the coin mechanism, and

a second spring disposed at the front portion of the at least one support element, the second spring configured to generate a return force on the contact portion when the actuator is actuated by the user; and

a product support member removably attached to the channel member, the product support member comprising an edge configured to releasably support the selected product disposed in the product receptacle, the product support member further defining an opening, the support member displaced upon actuation of the coin mechanism so that the edge disengages the selected product, allowing the selected product to be dispensed through the opening, the support member further configured to releasably support at least one product in the product receptacle disposed above the selected product upon dispensation of the selected product.

20. A coin mechanism for a vending machine requiring at least one coin before a selected product will be dispensed, comprising:

a support member having an inner surface and an outer surface;

a channel member rotatably connected to the support member, the channel member having a contoured channel formed thereon, the channel configured to define a coin slot when the channel member is in contact with the support member, the channel configured to receive and guide the at least one coin to a desired location, an actuator opening formed on the support and channel members at a location corresponding to the location of the at least one coin in the desired location, the channel member configured to normally be in contact with the support member and to displace relative to the support member when the coin mechanism is actuated, releasing at least one coin disposed in the contoured channel into a coin bank;

a coin guide attached to the channel member and protruding over the contoured channel, wherein the coin guide is configured to prevent the at least one coin disposed in the contoured channel from being released to a coin return receptacle when the channel member is displaced relative to the support member during actuation of the coin mechanism;

a coin return actuator connected to the support member, the return actuator comprising at least one protrusion protruding through the support member, the

protrusion configured to hold the at least one coin at least in part against a wall of the contoured channel of the channel member when the channel member is in contact with the support member, the at least one protrusion further configured to travel in a second actuator opening formed on the support member to release the at least one coin into the coin return receptacle upon actuation of the return actuator;

an actuator comprising:

a contact portion disposed frontward of the support member,

at least one support element slidably disposed through the support and channel members, the at least one support element having a front portion disposed between the contact portion,

an actuation member configured to protrude through the actuator opening in the support member and engage the at least one coin disposed in the desired location against the channel member upon actuation of the coin mechanism, the actuation member further configured to protrude through the actuator opening formed on the channel member when the actuator is actuated by the user without the at least one coin disposed in the desired location, preventing the selected product from being dispensed,

a spring disposed between the channel member and a product receptacle, the spring configured to displace a flag member to engage at least one product disposed above the selected product through an opening in a product receptacle during actuation of the coin mechanism,

a second spring disposed at the front portion of the at least one support element, the second spring configured to generate a return force on the contact portion when the actuator is actuated by the user; and

a product support member removably connected to the channel member, the product support member comprising an edge configured to releasably support the selected product disposed in the product receptacle, the product support member having a generally concave surface, the support member pivotally connected to the product receptacle and configured to rotate in a direction away from the support member upon actuation of the coin mechanism, wherein an upper edge of the support



member rotates beneath at least one product disposed above the selected product upon actuation of the coin mechanism, the upper edge providing support to the at least one product, and wherein a lower edge of the support member rotates away from the selected product during actuation of the coin mechanism, causing the selected product to be dispensed.

21. A coin mechanism for a vending machine comprising:

a contoured channel configured to receive and direct at least one coin to a desired location in the channel, the at least one coin disposed against a channel surface; and

an actuator configured to transmit a force onto one of the at least one coin to pivotably displace the channel about an axis to dispense a selected product from the vending machine.

22. A coin mechanism comprising:

a channel configured to receive and direct at least one coin to a desired location in the channel, the channel having a surface; and

an actuator configured to engage one of the at least one coin against the channel surface to movably displace the channel.

23. A method for dispensing a selected product from a vending machine requiring at least one coin before the selected product will be dispensed, comprising:

receiving the at least one coin in a contoured channel formed on at least one of a support and second movably connected members, the channel guiding the at least one coin to a desired location; and

actuating an actuator to transmit a force through an actuator opening formed on the support and channel members onto the at least one coin aligned with the actuator opening to displace the channel member relative to the support member to dispense the selected product.

24. A method for dispensing a selected product from a vending machine requiring at least one coin before the selected product will be dispensed, comprising:

receiving the at least one coin in a contoured channel formed on a channel member movably connected to a support member, the channel guiding the at least one

coin to a desired location, the at least one coin resting at least in part between a wall of the contoured channel and a member on a coin return actuator, the member protruding through an actuator opening in the support member;

actuating an actuator having an actuation member to engage the at least one coin with an edge thereof against the channel member, the actuation member traveling through an actuator opening in the support member; and

displacing the channel member relative to the support member, causing a product support member connected to the channel member to disengage the selected product, causing the selected product to be dispensed.

25. The method of Claim 24, wherein the actuation member has a stepped portion that causes the edge of the actuation member to shift when the stepped portion travels through the actuator opening, causing the edge of the actuation member to release the at least one coin.

26. The method of Claim 24, wherein actuating the actuator causes a spring disposed between the channel member and the product receptacle to displace a flag member to engage at least one product disposed above the selected product through an opening in the product receptacle.

27. The method of Claim 24 further comprising the step of releasing the actuator, causing a return force generated by at least one spring disposed between the actuator and the support member to displace the channel member into contact with the support member via a third member.

28. A method for dispensing a selected product from a vending machine requiring at least one coin before the selected product will be dispensed, comprising:

receiving the at least one coin in a contoured channel formed on a channel member movably connected to a rear side of a support member, the at least one coin resting proximate an actuation member connected to an actuator;

actuating said actuator to engage said coin disposed in the contoured channel against the channel member with the actuation member; and

displacing the channel member relative to the support member, causing a product support member connected to the channel member to remove support from the selected product to dispense the selected product.